

ABSTRACT OF THE DISCLOSURE

Methods and compositions are provided for planarizing a substrate with selective removal rates and low dishing, wherein the substrate comprises multiple dielectric materials, such as silicon oxide and a thin underlayer of silicon nitride used as a stop layer. One aspect of the method includes using a fixed abrasive polishing pad and at least one amino acid as a polishing fluid additive capable of significantly enhancing the polishing process. Amino acid addition in combination with fixed abrasive polishing of shallow trench isolation structures offers high topography and oxide to nitride selectivity.

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